

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

April 27, 2018

TO: S. A. Stokes, Technical Director
FROM: P. Fox, Hanford Resident Inspector
SUBJECT: Hanford Activity Report for the Week Ending April 27, 2018

Tank Farms: The contractor's Plant Review Committee (PRC) met to review an evaluation of the PISA that addresses errors in a calculation that provides the basis for flammable gas controls in double-contained receiver tanks (see 04/13/2018 report). The evaluation found that because the waste level in one tank exceeds a redefined maximum allowed level, the flammable gas concentration in that tank could have exceeded 25 percent of the lower flammability limit. The evaluation further found that this condition represents a reduction in the margin of safety. Based on the above information, the PRC determined that an unreviewed safety question exists. The contractor has implemented a compensatory measure that lowers the maximum allowed waste level at which passive ventilation can be relied upon to ensure the flammable gas concentration in the affected tank remains at a safe level. If the tank level exceeds that value, the shift team must enter a limiting condition of operation that requires periodic checks to ensure that tank headspace flammable gas concentration does not exceed the defined limit. The compensatory measure also reduces the allowed waste level for a second tank. However, the level of the waste in that tank is well below the new limit and therefore did not challenge the existing margin of safety. The compensatory measure will remain in place until DOE-ORP approves the contractor's evaluation of the safety of the situation.

The contractor drill team conducted an emergency preparedness field drill at the AZ Tank Farm. The scenario simulated a waste spill from a suspended pump that resulted in the simulated contamination and injury of two individuals. The resident inspector observed the field drill and noted that the scenario was challenging and appropriate considering ongoing activities in the tank farms. However, although individuals at the scene were effective in accomplishing some specific activities such as promptly transferring the affected individuals to the decontamination shower, command and control at the scene and radiological boundary control could be strengthened. Lastly, in most cases, the drill team identified field performance deficiencies and good practices similar to those noted by the resident inspector.

Plutonium Finishing Plant (PFP): Contractor work teams moved waste that is staged within the demolition zone to restore compliance with material management specific administrative control (see 2/23/2018 report). Additionally, the PFP hazard review board (HRB) met to evaluate work instructions that the demolition team will use to package that waste in shipping containers so that the material can be removed from the site and placed in storage at the Central Waste Complex. The HRB determined that the work instructions could be approved after planners incorporate minor modifications identified by the HRB. Additionally, the HRB determined that the work team was adequately prepared to safely perform the work.

Building 324: The contractor drill team conducted a limited exercise that simulated a major seismic event that resulted in simulated wall and roof collapse. During the exercise, the drill team discovered unexpected differences between site level actions for a seismic event and what is expected by the facility. Those differences will be evaluated and resolved.